

AEROSPACE BADGE

Activity 2: Test flight

Put together a simple model glider or make your own out of balsa wood. Can you make it fly straight, stall, loop, bank right, and bank left?

Resources in Kit

- ☆ CD-ROM: Aeropropulsion
- ☆ Poster: *International Space Station: A Dream...a Vision...a Reality*
- ☆ Lithographs: *International Space Station Assembly and Research on the International Space Station*

In this Section

- ➔ Right Flight Activity: Construct a Flying Model Glider
- ➔ X-Glider Educational Brief
- ➔ Wright Brothers 1900 Kite Model
- ➔ Space Station Construction Activity

Suggestions

- ☆ Start collecting Styrofoam meat trays early to have them on hand when you get to these activities...or check with your area grocery store and see if they will donate enough for your troop/group. The trays can also be purchased from a local restaurant supply store.
- ☆ Read about gliders in the "Right Flight" activity, and then use the template to trace the parts of the glider on to a Styrofoam tray. A paperclip is all you need to pierce the Styrofoam, although scissors will work too. See how the plane flies, then try angling the flaps, ailerons, and rudder one at a time to see how the flight is affected.

- ☆ The Delta Glider and the X-Glider offer more variations the girls can experiment with to discover which design yields the longest flight, best stunts, etc. Refer to Activity 9 for contest ideas.

Above and Beyond

- ☆ The *Aeropropulsion* CD-ROM has an activity called FoilSim that simulates what happens to an airplane's wing when different factors are adjusted.
- ☆ The Wright Brothers 1900 Kite Model is a fun project for girls with more patience. Check the sites below for other Wright Brothers models and an airplane model made out of balsa wood.
- ☆ Learn about the parts of the International Space Station. *The International Space Station: A Dream...A Vision...A Reality* poster explains the purpose of the spacecraft, the sequence of assembly, and includes an activity on how to build a model station out of scrap materials. This is an excellent group project.

Web Resources (on yellow paper)

- ☆ <http://www.grc.nasa.gov/WWW/Wright/index.htm>
This site has activities, simulations and research information that relates to the Wright Brothers. The 1900 Kite Model Instructions came from this site. Three other model instruction sets are available at the same site: 1901, 1902, and 1903 glider/flyers.
- ☆ <http://www.luminet.net/~bkuhl/rubber.htm>
This site is an educational web page for the AMA Cub / Delta Dart with tips on building and flying a Delta Dart which is a rubber-band powered model airplane. There is

also information about aerodynamics and a Beginner's Rubber Powered Airplane Design Contest.